

Features

Unregulated Converters

- 1:1 Input Range
- Efficiency up to 84%
- 2kVDC and 3kVDC Isolation Option
- Approved for Medical Applications
- -40°C to +90°C Operating Temperature Range
- 2W SMD Package

Selection Guide

| Part Number | Isolation Voltage (kV) | Input Voltage (VDC) | Output Voltage (VDC) | Output Current (mA) | Efficiency (max.) | Capacitive Load (max.) |
|-------------|------------------------|---------------------|----------------------|---------------------|-------------------|------------------------|
| RTM-0505S* | 2 | 5 | 5 | 400 | 79% | 2200µF |
| RTM-1205S* | 2 | 12 | 5 | 400 | 83% | 2200µF |
| RTM-2405S* | 2 | 24 | 5 | 400 | 84% | 2200µF |

* add Suffix "/H" for 3kVDC/1sec. Isolation e.g. RTM-0505S/H

* add Suffix "-R" for tape&reel packing e.g. RTM-1205S-R or RTM-2405S/H-R

Specifications (measured at $T_A = 25^\circ\text{C}$, nominal input voltage and rated output current unless otherwise specified)

| | | |
|--|---|--|
| Input Voltage Range | $\pm 10\%$ max. | |
| Output Voltage Accuracy | -1% typ., $\pm 5\%$ max. | |
| Line Voltage Regulation | (low line to high line at max. load) | 1.2% typ. |
| Load Voltage Regulation | (10% to 100% full load) | 10% typ., 15% max. |
| Output Ripple and Noise (20MHz BW limited) | 50mVp-p typ., 100mVp-p max. | |
| Operating Frequency (V_{in} =nominal input) | 20kHz min. / 40kHz typ. / 80kHz max. | |
| Efficiency at Full Load | see Selection Guide | |
| Minimum Load = 0% | Specifications valid for 10% minimum load only | |
| Isolation Voltage | RTM-xx05S (tested for 1 second) | 2000 VDC |
| | RTM-xx05S/H (tested for 1 second) | 3000 VDC |
| Isolation Capacitance | 30pF typ., 50pF max. | |
| Isolation Resistance | (Viso=500V) | 15GΩ min. |
| Short-Circuit Protection | 1 second | |
| Operating Temperature Range | with Derating | -40°C to +90°C |
| Storage Temperature | -55°C to +125°C | |
| Reflow Temperature | RoHS compliant | 245°C (30 sec.), Peak 255°C (5sec.) max. |
| Vapour Phase Process | (for more details see Application Notes) | 230°C (90 sec.) max. |
| Relative Humidity | 95% RH | |
| Package Weight | 1.4g | |
| Packing Quantity | All Types | 27 pcs per Tube |
| | All Types | 500 pcs per Reel |
| MTBF (+25°C) | } Detailed Information see Application Notes chapter "MTBF" | using MIL-HDBK 217F |
| MTBF (+85°C) | | using MIL-HDBK 217F |
| MTBF (+85°C) | | 3907 x 10 ³ hours |
| MTBF (+85°C) | | 313 x 10 ³ hours |

Certifications

EN Medical Safety Report: MDD1112018 + RM1112018 IEC/EN 60601-1 3rd Edition
Medical Report + ISO14971 Risk Assessment

EN General Safety EN60950-1, 2nd Edition

Note 1: Maximum capacitive load is defined as the capacitive load that will allow start up in under 1 second without damage to the converter.

ECONOLINE

DC/DC-Converter

RECOM

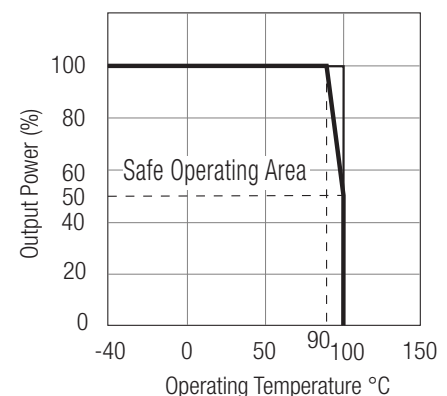
2 Watt SMD Single Output



EN-60601-1 Certified
EN-60950-1 Certified

RTM

Derating-Graph (Ambient Temperature)

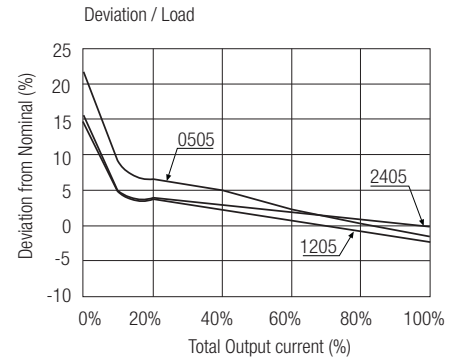
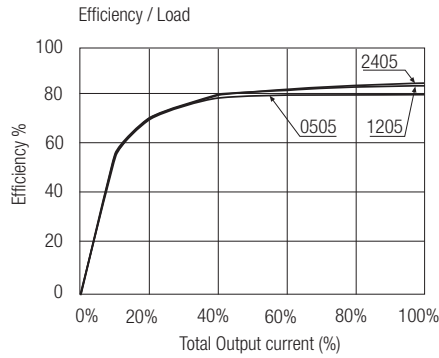
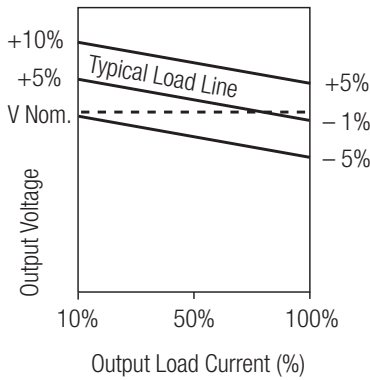


Refer to Application Notes

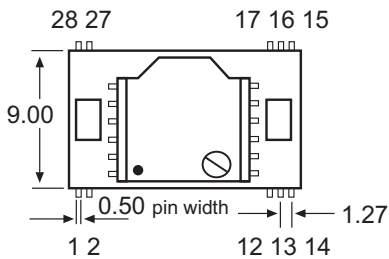
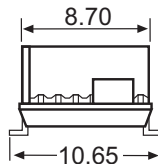
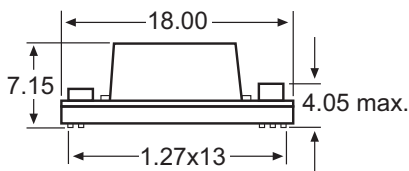
Typical Characteristics

Tolerance Envelope

RTM-xx05S



Package Style and Pinning



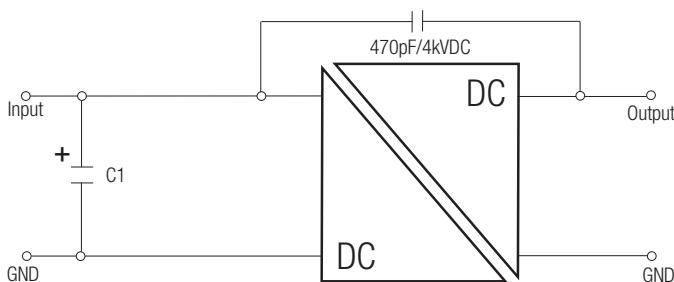
Pin Connections

| Pin # | Function |
|-------|----------|
| 1 | +Vin |
| 2 | -Vin |
| 12 | -Vout |
| 13 | +Vout |
| 14-17 | NC |
| 27,28 | NC |

NC = No Connection

Unit: mm
Tolerance: ± 0.25 mm

EMC Filtering - Suggestion for EN55022 Class B



| Input Voltage | Inductance/ Capacitance (C1) |
|---------------|------------------------------|
| 5V | 4.7µF |
| 12V | 2.2µF |
| 24V | 47µF |